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United States Patent [19]**Hufford**[11] **Patent Number:** **5,555,967**[45] **Date of Patent:** **Sep. 17, 1996**[54] **VIBRATORY DISTRIBUTOR FOR BULK ARTICLES**[75] Inventor: **David W. Hufford**, Walla Walla, Wash.[73] Assignee: **Key Technology, Inc.**, Walla Walla, Wash.[21] Appl. No.: **377,212**[22] Filed: **Jan. 23, 1995**[51] **Int. Cl.**⁶ **B65G 27/16**[52] **U.S. Cl.** **198/359; 198/771**[58] **Field of Search** 198/359, 370.01, 198/771; 209/920; 222/199, 200, 561[56] **References Cited****U.S. PATENT DOCUMENTS**

Re. 26,291	10/1967	Carrier, Jr.	198/771
438,527	10/1890	Coxe	
920,972	5/1909	Mathewson	
1,345,858	7/1920	Jenkins	
1,632,199	6/1927	Schnath	
1,955,032	4/1934	Stevenson, Jr.	209/90
2,111,663	3/1935	Graemiger	83/44
2,198,126	4/1940	Rein	209/85
2,642,980	8/1953	Soucek	198/771
2,649,224	8/1953	Bardet	222/197
3,043,420	7/1962	Kelly	198/359
4,313,535	2/1982	Carmichael	198/766

4,457,840	7/1984	Nagi	209/257
4,465,592	8/1984	Nagi	209/236
4,774,893	10/1988	Dumbaugh	110/186
4,936,489	6/1990	Blain et al.	222/200

Primary Examiner—Karen Merritt*Assistant Examiner*—James W. Keenan*Attorney, Agent, or Firm*—Wells, St. John, Roberts, Gregory & Matkin, P.S.[57] **ABSTRACT**

A vibratory distributor **10** is described in preferred form having an elongated vibratory bed **16** for conveying bulk articles in a flowing stream past a plurality of metering gate stations **12** to selectively distribute the articles at the stations. A metering gate assembly **40** at each station includes a stationary upper metering plate **44** and a lower movable metering plate **46**. Each of the plates **44**, **46** have matching elongated metering apertures formed therein at evenly spaced center-to-center intervals across the width of the flowing stream. Each of the elongated apertures **62**, **64** is oriented at a diagonal angle to the direction of flow with a segment of each aperture laterally overlapping an adjacent aperture. The apertures **62**, **64** have parallelogram shapes. A screw gate drive **78** is connected to the lower metering plate **46** to move the plate **46** to adjust the relative alignment of the apertures to regulate the metering of the articles at each of the stations **12**.

28 Claims, 9 Drawing Sheets